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Australian Energy Market Commission,Lodged electronically at https://www.aemc.gov.au/contact-us/lodge-submission

To whom it may concern,

Climateworks Centre's response to Unlocking CER benefits through flexible trading

Climateworks Centre welcomes the opportunity to respond to the Australian Energy Market Commission (AEMC) on *Unlocking CER benefits through flexible trading*. Climateworks Centre bridges the gap between research and climate action, operating as an independent not-for-profit within Monash University. Climateworks develops specialist knowledge to accelerate emissions reduction, in line with the global 1.5°C temperature goal, in Australia, Southeast Asia and the Pacific.

Context

As your Directions Paper points out, the net benefit of integrating Customer Energy Resources (CER) may be $1 -- 6.3 billion by 2030-2040 (from CSIRO and Baringa consulting and ARENA and NERA). Further, if Distributed Energy Resources (DER) and CER are poorly integrated, we may need more costly bulk energy renewable energy and transmission. As Australia endeavours to decarbonise in line with the Paris Agreement and its nationally determined contribution, the electricity sector will play a significant role, and flexible trading and integrating DER and CER into energy planning can contribute. Currently, CER interacts with the grid in five ways: through the Wholesale Demand Response Mechanism; VPPs; excess energy (mostly PV) export; state and territory energy efficiency schemes such as Queensland Savers; and state and federal demand management schemes.

Market signals are needed to benefit the grid via CER. The markets must encompass participation of generation, demand, storage (as load and supply) and negawatts. To add to this complexity, the AEMC must design for the different behaviours of retail and C&I customers.

Summary

Legislative changes to incorporate an emissions reduction objective into the national energy objectives are relevant to AEMC's consideration of CER benefits through flexible trading. We note that this is a new area for AEMC rule setting.

It is encouraging that electricity reform is becoming a bigger national priority. Integrating the demand side into energy planning can improve cost-effectiveness (energy from CER costs less than bulk energy). Integrating the demand side into planning can unlock private capital because customers mostly fund CER, and the government funds the bulk energy system.

For this reason, we encourage the AEMC to unlock CER benefits that prioritise the development of flexible loads to facilitate higher penetration of variable renewable energy and reduced requirements for investment in bulk energy transmission and storage. CER innovation can enable load shifting to balance supply/demand locally and similarly balance supply/demand across a geographic zone. We support the expansion of CER, which can be enabled by establishing technical standards and regulatory certainty. We caution, however, that an overly conservative approach to market innovation

may stifle innovation and frustrate CER integration. Our recommendations reflect these priorities, stem from Climateworks' broader project to model a net zero pathway for Australia, and are based on the AEMC Directions Paper.

Recommendations

***(a)* AEMC rules *encourage* load shifting, but it needs to be automatic control, not manual control.** Load shifting is an important way to respond to the variability of renewable energy generation. Load shifting includes shifting general household use (white goods and heating/cooling), electric vehicle (EV) charging and other commercial and industrial loads to off-peak periods. If traded automatically, CER will respond to dynamic pricing (time of use prices that shift) or differentiated 'time of use' tariffs (not via manual intervention). International examples do show an uptick in off-peak charging when partnered with appropriate price signals.[1]

***(b)* Ensure that the financial benefit flows are considered in the AEMC rule setting.** An increase in investment by customers and distribution companies to enable CER flexible trading will only occur if sufficient money is associated with flexible trading. This money can attract energy brokers, aggregators and the finance sector to play roles in CER flexible trading. Government schemes like the NSW Peak Demand Reduction Scheme can help fund CER investment.

***(c)* AEMC clarifies the CER impact on distribution grid costs**. An optimised distribution grid lowers the cost of the distribution system, and this saving is shared with all other users, including low-income households. The AEMC may want to take a position on whether DOE participation is enabled for large customers, VPP members only, or enabled for all customers. For commercial or industrial customers, these options could be tested through a place-based approach - for instance, through a Renewable Energy Industrial Precinct (REIP) or a regional approach through the Net Zero Authority.[2]

***(d)* AEMC support the development of standards for CER assets, including inverters and EV chargers, to encourage market innovation.** Communication standards, as well as technology standards, are needed. All AEMO settlements flow from transactions measured with National Meter Identifier (NMI) approved electricity meters, but this could be expanded to devices other than NMI meters. There is virtually no barrier to innovation in two-way control of CER assets, and standards are important to enable interoperability and to encourage further market innovation. One example would be standards for inverters to generate artificial inertia. A technical owner of these standards has yet to be nominated.

(f)* AEMC considers Demand Response (DR) in setting rules for *CER flexible trading, as DR is a relatively low-cost way of building grid resilience. The development of flexible loads to allow for increased proportions of variable renewable energy in the grid should be a focus of AEMC's development of flexible trading. The current National Demand Response Mechanism may expand significantly through CER flexible trading.

***(e)* AEMC brings their market expertise to coordinating energy performance improvements to benefit the energy market.** CER market outcomes can be increased by energy efficiency, so we recommend the AEMC investigates the role of improving housing energy performance for the energy market. Climateworks research shows that buildings contribute around a fifth of Australia's greenhouse gas emissions and 55 per cent of Australia's total electricity consumption. Making buildings more energy efficient can reduce demands on the grid from increased electrification, thereby reducing the infrastructure size and costs of a clean energy grid.

[1] For example, the United Kingdom, Norway and San Diego, USA.

[2] Our CEO, Anna Skarbek has been appointed to the Net Zero Economy Agency Advisory Board

Thank you for taking the time to consider our submission. We would welcome an opportunity to brief your team if you would like to explore our responses in further detail.

Yours sincerely,

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